

CLAIMS

We claim:

- 5 1. A method of fluorinating an aromatic compound or chloroaromatic compound comprising the steps of:
- 10 a) mixing at least one active fluorinating agent selected from the group consisting of CuF_2 , AgF , HgF_2 , TeF_4 , MnF_4 , FeF_3 , and CoF_{2-4} with at least one support selected from the group consisting of activated carbon, ZnF_2 , CaF_2 , MgF_2 , AlF_3 , and combinations of activated carbon, ZnF_2 , CaF_2 , MgF_2 , or AlF_3 ;
- b) heating said mixture to a temperature of at least 300°C or 350°C ; and
- 15 c) contacting said mixture with an aromatic compound, a chloroaromatic compound, a mixture of aromatic compounds, a mixture of chloroaromatic compounds, or a mixture of chloroaromatic and aromatic compounds.
2. The method according to claim 1, wherein said method further comprises recovering fluorinated aromatic or chloroaromatic compounds.
- 20 3. The method according to claim 1, wherein said temperature is at least 400°C .
4. The method according to claim 1, wherein said temperature is at least 425°C .
5. The method according to claim 1, wherein said temperature is at least 450°C .
- 25 6. The method according to claim 1, wherein said temperature is at least 500°C .
7. The method according to claim 1, wherein said aromatic or chloroaromatic compound is selected from the group consisting of benzene, chlorobenzene, substituted benzene, substituted chlorobenzene, pyridines, chloropyridines, substituted pyridines, substituted chloropyridines, naphthalene, substituted naphthalenes, chloronaphthalene,
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substituted chloronaphthalenes, toluene, chlorotoluene, substituted toluene, and substituted chlorotoluene.

8. The method according to claim 1, wherein aromatic compounds are contacted
5 with said mixture.

9. The method according to claim 1, wherein chloroaromatic compounds are contacted with said mixture.

10 10. The method according to claim 1, wherein a mixture of chloroaromatic and aromatic compounds are contacted with said mixture.

11. The method according to claim 9, wherein said mixture comprises AgF and at least one support.
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12. The method according to claim 8, wherein said aromatic compounds are aromatic hydrocarbons.

13. The method according to claim 12, wherein said aromatic compounds are
20 contacted with a mixture comprising CuF₂ and at least one support.

14. The method according to claim 9, wherein said chloroaromatic compound is ortho-dichlorobenzene, para-dichlorobenzene, meta-dichlorobenzene, a chloropyridine, chloronaphthalene, a chlorpyridine, chlorotoluene, substituted ortho-dichlorobenzene,
25 substituted para-dichlorobenzene, substituted meta-dichlorobenzene, a substituted chloropyridine, substituted chloronaphthalene, a substituted chlorpyridine, substituted chlorotoluene, or mixtures thereof.

15. The method according to claim 14, wherein said mixture is contacted by a mixture
30 comprising AgF and at least one support.

16. The method according to claim 15, wherein said mixture consists of AgF and at least one support.
17. The method according to claim 12, wherein said aromatic compounds are
5 contacted with a mixture consisting of CuF₂ and at least one support.
18. The method according to claim 11, wherein said mixture further comprises CuF₂.
19. The method according to claim 13, wherein said mixture further comprises AgF.
- 10 20. A method of fluorinating an aromatic compound comprising combining an aromatic compound, a chloroaromatic compound, a mixture of aromatic compounds, a mixture of chloroaromatic compounds, or a mixture of chloroaromatic and aromatic compounds and a fluorinating composition comprising at least one active fluorinating
15 agent selected from the group consisting of CuF₂, AgF, HgF₂, TeF₄, MnF₄, FeF₃, and CoF₂₋₄ and at least one support selected from the group consisting of activated carbon, ZnF₂, CaF₂, MgF₂, AlF₃, and combinations of activated carbon, ZnF₂, CaF₂, MgF₂, or AlF₃ and heating the combined components to a temperature of at least 350°C.